VULCAN POWER CO.

IBLA 92-373 Decided February 13, 1998

Appeal of two Decisions by the Oregon State Office, Bureau of Land Management, rejecting Vulcan Power Company's proposal for geothermal exploration and development and approving the rival proposal by CE Exploration Company, and requiring joinder of interests in lease OR 45506. UA-OR 47842X.

Set aside and remanded.

1. Environmental Quality: Environmental Statements--National Environmental Policy Act of 1969: Environmental Statements

   A Federal agency must take a "hard look" at the environmental consequences of its proposed actions to satisfy the requirement that it prepare statements addressing major Federal actions significantly affecting the quality of the human environment. In reviewing whether BLM has taken a "hard look," the Board examines whether the record establishes that BLM made a careful review of environmental issues, identified relevant areas of environmental concern, and whether its final determination was reasonable.

2. Environmental Quality: Environmental Statements--Geothermal Leases: Impact Statements--National Environmental Policy Act of 1969: Generally

   Federal agencies are authorized, when adopting procedures to implement the National Environmental Policy Act, to define categories of actions which do not individually or cumulatively have a significant effect on the human environment and for which neither an environmental assessment nor an environmental impact statement is required. The Departmental Manual provides for such "categorical exclusions" in appendices to chapter 6, part 516, and under the title "Fluid Minerals," exempts approval of "unitization agreements." There is no express language including geothermal resources within that exemption. Accordingly, the exemption for unitization agreements does not apply to geothermal unitization.

3. Administrative Procedure: Adjudication: Leases and Permits

As a general rule, BLM may rely upon previously approved assignments in making decisions concerning geothermal leases, including approval of proposed geothermal units.

4. Administrative Procedure: Administrative Record--Rules of Practice: Appeals: Generally

Affidavits and documents submitted as postdecisional documentation of the record on appeal are not necessarily equivalent to a contemporaneous record reflecting BLM's review and decisionmaking process. Conclusory or argumentative statements by an affiant need not be accepted for purposes of review. Absent documentation of the analysis and conclusions of BLM's technical personnel, no special weight can be accorded to their expertise.

5. Geothermal Leases: Unit and Cooperative Agreements--Rules of Practice: Appeals: Generally

Where the administrative record is devoid of the information and technical data considered by BLM concerning the relative heat generation potential of two geothermal units, a decision selecting one geothermal unit over another for development will be set aside as not supported by the record.

6. Geothermal Leases: Unit and Cooperative Agreements

Designation of an area as logically subject to geothermal development is distinct from designation of a participating area. The former is a preliminary decision which allows the applicant to prepare a final application, including a unit agreement, and seek joinder from those who hold leases and other interests therein. It does not preclude revision of the boundaries prior to final approval of the unit and does not create an exclusive right to submit a unit agreement. A participating area is designated after a geothermal resource has been discovered and the unit operator has submitted geologic information obtained during exploration along with other data.

7. Geothermal Leases: Leases and Permits: Generally--Geothermal Leases: Unit and Cooperative Agreements

Unless BLM has reviewed and approved the terms of a geothermal unit agreement, an order requiring a party to join the unit does not require it to execute a unit operating agreement.

8. Administrative Procedure: Adjudication--Geothermal Leases: Unit and Cooperative Agreements

The Geothermal Steam Act gives broad authority to administer geothermal leases and units as necessary or advisable in the public interest and to issue regulations governing units. Undisclosed criteria cannot be applied to determine the rights of lessees and applicants for geothermal units.

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OPINION BY ADMINISTRATIVE JUDGE TERRY

Vulcan Power Company (Vulcan, VPC, or Appellant) has appealed two April 20, 1992, Decisions by the Oregon State Office, Bureau of Land Management (BLM). One rejected the company's proposed Newberry West Flank Unit for exploration and geothermal development of an area bordering the Newberry National Volcanic Monument (the Monument), Deschutes County, Oregon. The other approved the rival Deschutes Unit proposed by CE Exploration Company (CEE). The BLM also notified Vulcan that it was "requiring all lessees and working interests of record on lease OR 45506 to join the approved Deschutes Unit to assure conservation of resources and orderly and proper development of the area." Accordingly, BLM informed Vulcan that CEE "will be sending a joinder to you for your signature" and that, if Vulcan failed to join its interest in lease OR 45506 within 30 days, "we will consider this lease joined to the Unit by the authority of the Authorized Officer."

Case History

The Monument is located about 20 miles south of Bend, Oregon. It was established as a component of the National Forest System by legislation enacted November 5, 1990. Pub. L. No. 101-522, 104 Stat. 2288. The Monument's boundaries encompass the rim of the volcano, within it Paulina Lake and East Lake, and extend some distance to the northwest to include lava flow areas. Previously, land around the volcano had been designated the Newberry Caldera Known Geothermal Resource Area and geothermal leases had been issued for some land later included in the Monument. 41 Fed. Reg. 28,331 (July 9, 1976). The legislation allowed such leases to be relinquished and in lieu (compensatory) leases to be issued for lands adjoining the Monument. Pub. L. No. 101-522, § 3(b), 104 Stat. 2288, 2290 (1990). The BLM ordered joinder of lease OR 45506 to CEE's Deschutes Unit. Lease OR 45506 is a compensatory lease, but its ownership has been subject to a dispute between Vulcan and CEE.

Vulcan submitted its initial proposal for the Newberry West Flank Unit on January 6, 1992, apparently at a meeting with BLM personnel. On January 27, 1992, Vulcan filed a formal proposal, including a unit agreement, unit map, schedule of leases, and plan of operation. Its proposed unit consisted of 18,979.76 acres on the western side of the Monument. Vulcan submitted a slightly modified unit agreement on February 3, 1992, and the next day BLM approved the proposed unit as a logical unit area and gave preliminary approval to the unit agreement. (Statement of Reasons (SOR), Ex. 18.) Vulcan filed a complete copy of its documentation on March 27, 1992. The BLM's April 1992 Decision denying approval of Vulcan's proposed unit stated:

> We regret to inform you[,] however[,] we have accepted the Unit proposal submitted by CE Exploration. We gave both proposals careful consideration. Our review included degree of overall effective control and control commensurate with geology with projected heat content, power marketing and experience, and completeness and accuracy of the Unit Agreement and Plan of Operation. It was difficult to make a choice.

The CEE filed its initial request that the Deschutes Unit be declared logically subject to exploration and development and a proposed unit agreement on September 27, 1991, and filed a plan of operation on October 7, 1991. 1/ On November 15, 1991, BLM approved CEE's proposed unit as a logical unit area, as corrected to include 17,821.33 acres. (SOR, Ex. 19.) The Deschutes Unit consists of two areas. One is a block of leases on the western side of the Monument which includes most of the land within 3 miles of the Monument that is part of Vulcan's proposed unit, but omits areas further to the west, and additional land on the north and northeast of Vulcan's proposed unit. The second area lies on the northern side of the Monument, northeast of the western block and separated from it by Monument lands. The CEE filed revised versions of its proposed unit agreement on December 13, 1991, and January 3 and 15, 1992, and February 3, 1992. The BLM granted preliminary approval by letter dated February 4, 1992, and CEE filed final documentation on March 30, 1992. Similar to its letter to Vulcan, BLM's April 20, 1992, Decision approving CEE's proposed unit stated that its review had "included the degree of overall effective control and control relative to geology, estimated heat content, power marketing and experience, and completeness and accuracy of Unit Agreement and Plan of Operation."

Vulcan's SOR requested that both Decisions be stayed pending review of the appeal. (SOR at 3.) By Order dated September 21, 1992, CEE was

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1/ The copy of the application contained in the case file includes only the first page of CEE's cover letter in which CEE requested "approval of the proposed form of Unit Agreement and Exhibits A and B of the Unit Agreement." Neither exhibit is part of the copy of the application. The file, however, contains revised exhibits A and B filed with BLM on Nov. 8, 1991, as well as subsequent revisions.

allowed to intervene in the appeal and Vulcan's request for a stay was taken under advisement. Subsequently, Vulcan's request that an administrative law judge be assigned for a hearing was taken under advisement. As noted by BLM, the April 20, 1992, Decisions did not require an appellant to request a stay to preclude a Decision from becoming effective. (BLM Answer at 15; see 58 Fed. Reg. 4939 (Jan. 19, 1993).) The CEE's request that the Decision approving its Deschutes Unit be placed into full force and effect was denied by Order dated October 21, 1993.

Numerous briefs and supporting documents have been filed by the parties. Vulcan supplemented its SOR with several Affidavits and 20 exhibits, and BLM's and CEE's Answers included Affidavits and exhibits. Vulcan filed additional documents with its Reply to the Answers. The BLM, to correct what it believed to be inaccurate assertions in Vulcan's Reply, submitted another Affidavit with supporting exhibits. A second round of briefing occurred after the U.S. District Court for the District of Oregon (District Court) ruled in Vulcan's favor and against CEE in the dispute over rights to several leases, including OR 45506 (Civ. No. 92-6264-HO, June 6, 1994). 2/ In addition to documents related to the Decision, Vulcan filed two supplements to its SOR. By Order dated March 9, 1995, the Board closed the record on appeal. 3/ On February 20, 1996, the United States Court of Appeals for the Ninth Circuit (Ninth Circuit) reversed the District Court in Vulcan Power Co. v. CE Exploration, Civil No. CV-92-06264-MRH, ruling in CEE's favor in the dispute over rights to the lease for OR 45506, among others.

Issues Presented

Due to the number and variety of arguments raised by the parties, little would be gained by presenting them in detail prior to addressing each

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2/ Vulcan's SOR included a copy of its Complaint against CEE. (SOR, Ex. 7.) In addition to the June 6, 1994, opinion ruling in Vulcan's favor, Vulcan has submitted a copy of an earlier ruling on Vulcan's Motion for Summary Judgment, (Civ. No. 92-6264-HO, Feb. 25, 1994), and a copy of the court's judgment directing "[t]hat defendant assign to plaintiff U.S. geothermal leases OR 11987 and OR 11992, and 64.9 percent of compensatory lease OR 45506." (Civ. No. 92-6264-HO, Oct. 13, 1994, at 1.) On Aug. 29, 1994, CEE filed a copy of its Motion requesting that the court reconsider its June 6, 1994, Decision. On Nov. 7, 1994, CEE provided a copy of its notice of appeal to the Ninth Circuit. On Feb. 20, 1996, the Ninth Circuit reversed the District Court and determined that the Vulcan option to purchase had not been properly exercised, and it vacated the assignment order. The Ninth Circuit found that Vulcan's attempted exercise of the option to purchase failed because the option was not exercised according to its terms before it expired. See Vulcan Power Co. v. CE Exploration, Civ. No. CV-92-06264-MRH, Feb. 20, 1996.

3/ On Sept. 10, 1996, the Board received Vulcan's Motion to Re-Open Record and Third Supplemental Memorandum to Statement of Reasons. On Sept. 27, 1996, CEE opposed this latest Motion. Vulcan's Motion is denied.

in turn. Suffice it to say that Vulcan's SOR raises seven issues which have remained, with variations, the subject of subsequent briefs. They are whether:

1. The BLM failed to take into account the environmental consequences of its actions in violation of 43 C.F.R. § 3283-2.1.

2. The BLM should have withheld issuance of lease OR 45506, approval of a unit agreement, and forced joinder of Vulcan's interest in OR 45506 until resolution of the conflict between Vulcan and CEE over their ownership interests.

3. The BLM erred in the manner in which it analyzed control of surface acreage and underlying geology to determine the "effective control of operations."

4. The BLM erred in approving the Deschutes Unit as "land logically subject to development" as a single consolidated unit.

5. The BLM erred in approving an inequitable unit operating agreement (UOA).

6. The BLM failed to recognize that CEE's plan of operations contained errors, was incomplete, and inferior to Vulcan's in accuracy, completeness, and relative timing.

7. The BLM erred in using "experience" and "power marketing" as criteria to evaluate the applications and relied upon inadequate or incorrect information in reviewing experience.

Vulcan asks the Board to reverse both of BLM's April 20, 1992, Decisions so as to reject CEE's proposed unit and approve Vulcan's. In the alternative, Vulcan requests that the Board reject both proposals and require BLM to reopen its decisionmaking process to allow both parties to supplement their proposals. (SOR at 2.)

After considering the briefs and documents submitted by the parties, we conclude that the Decisions must be set aside and remanded to BLM. As discussed below, several reasons compel this conclusion. Because we are aware that not all matters pertaining to development of leased areas were affected by the automatic stay of the Decisions, including approval of drilling permits and a plan of operation, see Oregon Natural Resources Council, IBLA 94-815 (Dec. 2, 1995), we address each issue raised by Vulcan and the arguments of the parties to the extent necessary to allow BLM to review the proposed units on remand.

1. Environmental Consequences

Vulcan's first argument, that "BLM failed to take into account the environmental consequences of its actions in violation of 43 CFR 3283-2.1," paraphrases the cited regulation:

> A duly executed unit or cooperative agreement shall be approved by the Secretary or his/her duly authorized representative upon a determination that such agreement is necessary or advisable in the public interest and is for the purpose of properly conserving the natural resources, taking into account the environmental consequences of the action.

(SOR at 5.) Vulcan claims that BLM failed to consider information concerning the environmental consequences of the proposed units and that "a comparison would have shown that development of the leases within the Vulcan unit would have far less impact on sensitive environments and less public controversy than the CEE unit." Id. To support that argument, Vulcan presents an analysis of the land status designations of the acreage in each proposed unit, showing that CEE's includes a greater number of environmentally restricted acres, and argues that the lower number of restricted acres in its proposal establishes the superiority of its proposal. (SOR at 6-10; Exs. 10-12.) 4/ By neglecting this information, Vulcan contends, BLM failed to consider a matter of material significance and violated the "reasonableness requirement" set forth in Southern Utah Wilderness Alliance, 114 IBLA 326, 332 (1990), in which the Board stated:

> [A] determination that a proposed action will not have a significant impact on the quality of the human environment will be affirmed on appeal if the record establishes that a careful review of environmental problems has been made, relevant areas of environmental concerns have been identified, and the final determination is reasonable. A party challenging the determination must show * * * that the analysis failed to consider a substantial environmental question of material significance to the action for which the analysis was prepared.

(SOR at 5-6.) Vulcan also cites the National Environmental Policy Act (NEPA), 42 U.S.C. § 4332 (1994), and contends that the "hard look" doctrine should apply to approval of a unit agreement or a UOA. (SOR at 14.)

Although not articulated by Vulcan, the issue it raises by invoking the "hard look" doctrine is whether BLM should have prepared an environmental assessment (EA) or environmental impact statement (EIS) prior to approving either proposed unit. Understanding this to be the question, both BLM and CEE argue that the Departmental Manual (DM) categorically

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4/ The restricted areas include a special management area created by the Newberry National Volcanic Monument Act for which no surface occupancy leases are issued, Pub. L. No. 101-522, § 4(a)(5), 104 Stat. 2288, 2291 (1990), a transferral area which must be managed "to preserve the natural values of the area which would qualify it for designation as a national monument," id., section 2(b)(3) at 2289, designated roadless and scenic view management areas in the Deschutes National Forest, an area designated as "less suitable" for power plant facilities by the Oregon Energy Facility Siting Council, and general forest lands. See also Pub. L. No. 101-522, § 4(c), 104 Stat. 2288, 2292 (Nov. 5, 1990).

excludes approval of unitization agreements from NEPA review. (BLM Answer at 10; CEE Answer at 9.) The BLM also argues that an Affidavit by Patrick H. Geehan, Deputy State Director for Mineral Resources and the official issuing the Decisions on appeal, shows that BLM considered the environmental consequences of its Decision. (BLM Answer at 9-10; Aff. at 8.) 5/ The CEE points out that considerable environmental review was conducted by BLM and the Forest Service as shown by the preparation of the Surface Resource Analysis prior to creation of the Monument, and as reflected in surface use restrictions and lease stipulations on various lands in its Deschutes Unit. (CEE Answer at 9-12.) The CEE further notes that environmental concerns about geothermal development were reviewed in the Deschutes National Forest Land and Resource Management Plan and its accompanying EIS. (CEE Answer at 16.) While it may be true that BLM relied upon the environmental review and analyses contained in these documents, neither was included in the administrative record submitted on appeal. Moreover, the April 20, 1992, Decisions at issue in this appeal did not refer to or cite these documents as a basis for BLM's conclusions and action. 6/

[1] The doctrine that Federal agencies must take a "hard look" at the environmental consequences of their actions is the fundamental point of NEPA's requirement that Federal agencies prepare statements addressing "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C) (1994); see Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 374 (1989), Kleppe v. Sierra Club, 427 U.S. 390, 410 n.21 (1976), Sierra Club v. Hathaway, 579 F.2d 1162 (9th Cir. 1978); Mandelker, NEPA Law and Litigation, § 3:07 (1984). The language Vulcan emphasizes from Southern Utah Wilderness Alliance, supra, is one statement of the standard this Board applies in reviewing an EA or EIS to determine whether BLM has taken the "hard look" required by NEPA.

5/ Geehan states that he "noted that geothermal leases in the Newberry Volcano area contain the most restrictive conditions that are possible to impose," including "one that reserves to the United States the option of prohibiting all actions on the lease, the so-called contingent right stipulation (see Exhibit F)." (BLM Answer, Aff. at 8.) See generally Union Oil Co. of Cal., 102 IBLA 187 (1988). Exhibit F is a single page, undated and unsigned, bearing the notation "OR 48001." The number is not a lease in either of the proposed units. The only lease which is part of the record before the Board, OR 45506, does not contain the provision, although it does prohibit surface use and occupancy within the special management area. See note 3, supra. Geehan also states that he noted that environmental concerns had been reviewed by BLM and the Forest Service in preparing the "Surface Resource Analysis" which developed lease restrictions for the Monument area. (BLM Answer, Aff. at 8.) That document is not part of the record.

6/ It seems unlikely that an EIS prepared to review the environmental effects of a general forest plan anticipated the specific unitization and development proposals CEE and Vulcan would later present. See, e.g., Southern Utah Wilderness Alliance, 123 IBLA 302 (1992).

Apart from NEPA, however, and contrary to Vulcan's apparent claim, Southern Utah Wilderness Alliance and similar Board decisions do not establish an independent/separate standard for review of environmental issues. Thus, as correctly perceived by BLM and CEE, the issue is whether NEPA required BLM to prepare an EA to determine whether approval of a unit agreement would significantly affect the quality of the human environment.

[2] We do not, however, agree with BLM and CEE that the issue is resolved by the DM. Regulations promulgated by the Council on Environmental Quality authorize Federal agencies, when adopting procedures to implement NEPA, to define categories "of actions which do not individually or cumulatively have a significant effect on the human environment * * * and for which, therefore, neither an [EA] nor an [EIS] is required." 40 C.F.R. § 107.3(b)(2)(ii), § 1508.4. The DM provides such "categorical exclusions" in appendices to chapter 6, part 516. The BLM and CEE cite appendix 5 which, under the title "Fluid Minerals," exempts: "Approval of unilization [sic] agreements, communitization agreements, drainage agreements, underground gas storage agreements, compensatory royalty agreements, or development contracts." 516 DM 6, App. 5, 5.4B(4) (May 19, 1992). We assume that the intended word was "unitization" rather than "unilization," and will refer to it as such, and find that the history of the Geothermal Steam Act, 30 U.S.C. §§ 1001-1027 (1994), precludes construing the provision to include geothermal resources.

The Department originally took the position that geothermal resources were neither "valuable mineral deposits" available for location under the mining laws, see 30 U.S.C. § 22 (1994), nor subject to leasing under the Mineral Leasing Act, 30 U.S.C. §§ 181-287 (1994). See Solicitor's Opinion "Geothermal Leasing in Designated Wilderness Areas," 88 Interior Dec. 813, 815 (1981); Olpin, "The Law of Geothermal Resources," 14 Rocky Mtn. Min. L. Inst. 123, 142-46 (1968), and documents cited. The Department also maintained that geothermal fluids were not reserved as minerals under the Stockraising Homestead Act, 43 U.S.C. §§ 291-302 (1994). Id. at 139-40. Subsequently, however, the United States successfully maintained that geothermal resources had been reserved under that Act. United States v. Union Oil Co. of California, 549 F.2d 1271 (9th Cir.), cert. denied sub nom. Ottoboni v. United States, 434 U.S. 930 (1977), rehearing denied, 435 U.S. 911 (1978).

The uncertain legal status of geothermal resources on Federal lands led to the adoption of the Geothermal Steam Act, which defines "geothermal steam and associated geothermal resources" as:

> (i) all products of geothermal processes, embracing indigenous steam, hot water and hot brines; (ii) steam and other gases, hot water and hot brines resulting from water, gas, or other fluids artificially introduced into geothermal formations; (iii) heat or other associated energy found in geothermal formations; and (iv) any byproduct derived from them.

30 U.S.C. § 1001(c) (1994).

"Byproduct" is defined to mean:

> [A]ny mineral or minerals (exclusive of oil, hydrocarbon gas, and helium) which are found in solution or in association with geothermal steam and which have a value of less than 75 per centum of the value of the geothermal steam or are not, because of quantity, quality, or technical difficulties in extraction and production, of sufficient value to warrant extraction and production by themselves.

Id.; see 43 C.F.R. § 3200.0-5(d). Under the latter definition, some minerals may be developed by a geothermal lessee because they are defined to be part of the geothermal resource, but the geothermal resource itself is not a mineral. See also 30 U.S.C. §§ 1008, 1025 (1994); 43 C.F.R. § 3203.1-6. The Solicitor has also opined "that geothermal resources are not `mineral' as that word is generally understood in the mineral leasing laws." Solicitor's Opinion, supra, at 818; but see Eugene Water & Electric Board, 98 IBLA 272 (1987) (affirming rejection of geothermal lease offers for lands in wilderness area withdrawn from mineral leasing). In keeping with the distinction, the provision BLM cites includes communitization agreements, drainage agreements, and underground gas storage agreements—matters which are not part of geothermal development. See BLM Response to Supplement SOR, Aff. at 11-12. Nor does the history of the categorical exclusion offer any clear basis for concluding that it includes geothermal leasing. 7/ Consequently, in the absence of express language that the terms "Fluid Minerals" and "uni[t]ization" in appendix 5 embrace geothermal resources, we decline to construe them in that fashion.

Because we find the cited categorical exclusion does not exempt approval of a proposed geothermal unit from NEPA, BLM's Decisions must be

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7/ At one time, categorical exclusions for some geothermal activities were included in appendix 5 under a "Minerals" heading, although unitization agreements were not mentioned. 46 Fed. Reg. 7492, 7495 (Jan. 23, 1981), 47 Fed. Reg. 50,368, 50,372 (Nov. 5, 1982); see Sierra Club, The Mono Lake Committee, 79 IBLA 240, 249-50; Sierra Club, The Mono Lake Committee (On Reconsideration), 84 IBLA 175 (1984). Until 1993, appendix 2, applicable to the U.S. Geological Survey, provided exclusions for "Geothermal Resources" and an "Administrative and General" section exempted approval of unitization agreements. 46 Fed. Reg. 7485, 7487 (Jan. 23, 1981), 58 Fed. Reg. 47,473 (Sept. 9, 1993). Apparently this section was consulted when appendix 5 was revised to apply to onshore minerals operations transferred to BLM, as an exclusion for unitization agreements was included in an "Administration" section under "Minerals" and the list of specific exemptions for "Geothermal Resources" was expanded. 48 Fed. Reg. 43,731, 43,734 (Sept. 26, 1983); see 48 Fed. Reg. 8982, 8983 (Mar. 2, 1983). However, when appendix 5 was revised to its current form, the specific exemptions, as well as the headings, were eliminated. See 57 Fed. Reg. 10,913, 10,918 (Mar. 31, 1992); 54 Fed. Reg. 47,832, 47,834 (Nov. 17, 1989). The sole mention of geothermal resources now appears in a list of C.F.R. parts which "may apply to a particular application." 516 DM 6, appendix 5, 5.2B(10) (May 19, 1992).

set aside. For this reason we need not decide the purpose or scope of the clause "taking into account the environmental consequences of the action" upon which Vulcan relies. Whatever duty it imposes would be satisfied by preparation of an EA or EIS, and thus it would be premature to decide the extent of the review required when such a document has not been prepared. Vulcan's argument that a comparison of land status designations shows the superiority of its proposal because it has fenced environmentally restricted acres, is misplaced. The clause requires BLM to consider environmental consequences. Protective land classifications are undoubtedly relevant, but the clause neither limits BLM to considering such information nor mandates that the selection between competing proposed units shall be determined by the environmental impact each will have. Vulcan's argument also fails to acknowledge that unitization is intended to allow wells and facilities to be efficiently located and that not all land in a unitized area will be developed or equally affected by development. Indeed, restrictive land classifications may be regarded as environmentally favored because the unit operator must take into account, design for, and mitigate damage to land on which the protected resources are located. See BLM Answer, Aff. at 9.

2. Effect of Lease Controversy

Vulcan's second argument is that

> BLM, despite its knowledge of a controversy between the applicant CEE and VULCAN concerning assignment of leases[,] failed to (1) withhold approval of any unit agreement containing the leases in controversy[,] (2) withhold issuance of lease OR 45506, and (3) withhold any action for forced joinder of interests in OR 45506 until resolution of the conflict.

(SOR at 15.) It appears that lease OR 45506 was issued as partial compensation for relinquishment of leases OR 11987 and OR 11992. The copy of lease OR 45506 provided by BLM shows that 87.22 percent was issued to CEE, 9.36 percent to Vulcan, and 3.42 percent to Terry Allen Kramer. Vulcan's claim to a greater portion of OR 45506, as well as to 100 percent of leases OR 11987 and OR 11992, arises from an option to purchase the latter two leases obtained by its predecessor-in-interest. The CEE rejected Vulcan's attempt to exercise the option, (Vulcan Response, Exs. 1-3), and that position has now been upheld by the Ninth Circuit.

Vulcan argues that under Pat Reed, 119 IBLA 338 (1991), BLM should have withheld all action until its dispute with CEE was resolved. (SOR at 15, 17.) In Reed the Board stated:

> The policy of the Department has been that it will not adjudicate private disputes regarding the validity and effect of oil and gas lease assignments and contracts pertaining to them until the parties have had an opportunity to resolve them privately or in

> court. Thus, when the Department receives notice of a controversy, it will act to maintain the status quo in order to allow the parties time to reach a resolution.

Reed, supra, at 342-43; see Wallis v. Pan American Petroleum Corp., 384 U.S. 63 (1966). With its Reply brief Vulcan has presented documents to show that BLM was aware of the controversy.

The BLM argues that Reed is distinguishable because it recognized the ownership of one party rather than another by approving a lease assignment. (BLM Answer at 7.) The BLM also states that lease OR 45506 was offered to all the existing lease holders in compensation for the relinquishment of prior lease rights by a Decision dated May 10, 1991, and that a copy was sent to CEE, Waters, the assignor of the disputed options, and Geo-Newberry Crater, Inc., Vulcan's predecessor-in-interest. Id. The BLM asserts that no one objected to issuing lease OR 45506, and Vulcan should not be allowed to collaterally attack the decision to do so. Id. at 7-8. The BLM also asserts that it has a right to rely upon official records in making decisions concerning lease administration. Id. at 8. Similarly, CEE argues that Vulcan should not be allowed to question BLM's Decision to issue lease OR 45506 when neither it nor its predecessor appealed. (CEE Answer at 17.) The CEE contends that, absent an appeal, the conflict over the lease did not provide a reason to withhold approval of its proposed unit. Id. at 17-18.

We agree with BLM and CEE that the Decision to issue compensatory lease OR 45506 is not before us, but reach that conclusion on a different factual basis. Although the May 10, 1991, date identified by BLM is accepted by Vulcan, (Vulcan Response to BLM and CEE Answers, Carter Aff. at 1), the record on appeal does not include a copy of that Decision. The copy of lease OR 45506 provided by BLM, however, is accompanied by a March 2, 1992, Decision addressed to CEE, which accepts CEE's relinquishments as of that date and encloses lease OR 45506. The lease is signed by the Chief, Lands and Minerals Adjudication Section, and bears the same date. Thus, the record before the Board shows that the Decision to issue compensatory lease OR 45506 was issued March 2, 1992, and was subject to appeal at that time. 43 C.F.R. § 4.21(a).

Vulcan did not object to issuance of lease OR 45506 when it submitted its relinquishments to BLM, apparently because it believed it had preserved its rights under the option. See CEE Answer, Ex. I; Vulcan Response at 9. Nor did Vulcan file an appeal after receiving its copy of the Decision. Therefore, we find that Vulcan did not timely appeal the Decision to issue compensatory lease OR 45506 and thus the question whether its issuance should have been withheld pending resolution of the controversy between Vulcan and CEE is not before us.

Nor do we agree that Reed required BLM to have withheld approval of CEE's proposed unit pending resolution of the dispute between Vulcan and CEE. In Reed, BLM approved a lease assignment and denied an assignment of the same lease to the appellant due to deficiencies in the documents he had

filed. Reed, supra, at 340. The Board disapproved the action because it found that the conflicting assignments filed by the parties had put BLM on notice that there was a dispute about entitlement to the lease, and, by approving an assignment, BLM had recognized record title in one party, in effect taking sides in a private dispute. Id. at 243. The Board also disapproved BLM's issuance of a decision approving the rival assignment without notifying Reed as an adverse party. 8/ As BLM points out, approval of CEE's proposed unit did not entail recognition of record title, but rather relied upon assignments previously approved. See also Lawrence H. Merchant, 81 IBLA 360, 364 (1984).

[3] The Board has frequently recognized that BLM may rely upon record title in making decisions concerning leases. See, e.g., Piute Energy Co., 116 IBLA 1, 6 (1990). While we are not prepared to hold that BLM may do so despite all knowledge it may have of underlying lease disputes, we find BLM acted properly in this case. 9/ In accord with its records, BLM included the 1,200 acres in leases OR 11987 and OR 11992 in the acreage over which CEE was deemed to have "effective control" of the surface. See BLM Response, Aff. at 1; CEE Answer, Ex. J. Correspondingly, BLM excluded 640 acres in lease OR 11992 from those classified as "committed" to Vulcan's unit. The 560 acres of lease OR 11987 are not part of Vulcan's proposed unit. (BLM Answer, Aff. at 6; Ex. A.) The BLM did not count the 1,109.89 acres of lease OR 45506 as under the "effective control" of either applicant, apparently because they were not "fully committed" to either proposal. See BLM Response to Supplements, Aff. at 10-11. The disputed acreage that BLM included in CEE's proposed unit and excluded from Vulcan's proposed unit was a small portion of the total acreage of each, and the consequence of delaying a decision pending resolution of the dispute would

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8/ In this respect, the present appeal is similar to Reed. Like BLM's approval of the assignment in Reed, the Decision approving CEE's proposed unit did not name Vulcan as an adverse party. The BLM recognized that the two proposals included many of the same lands and that both could not be approved. (BLM letter of Feb. 4, 1992, SOR Ex. 18.) Accordingly, BLM should have either issued a single Decision addressing both applications or named Vulcan and CEE as parties to the separate Decisions issued to each. Because BLM issued the Decisions simultaneously and sent Vulcan a copy of the Decision approving CEE's proposal, Vulcan was able to timely appeal both. If the timing had been different, this appeal might be reviewed after a period during which CEE had proceeded on the belief that the Decision approving its unit was final. Cf. Chevron U.S.A. Inc., 111 IBLA 96, 100 (1989) (approval of expansion proposal subject to appeal).

9/ In its Answer, BLM contends that Vulcan never requested a postponement of action on the proposed plans prior to the issuance of the Apr. 21, 1992, Decision approving CEE's plan. (BLM Answer at 8.) Although Vulcan argues that BLM knew of the dispute between Vulcan and CEE and thus should have stayed all action pending a resolution, the record does not contain any such request, and Vulcan has not produced one or alleged that a request was made before it filed suit in July 1992.

have been to deprive other lessees and owners of working and royalty interests of the potential benefits of unitization. Id., Aff. at 2-3. In these circumstances, we conclude that Reed did not require BLM to delay a decision on the proposed units.

Finally, Vulcan argues that BLM should have withheld ordering joinder of its interest in lease OR 45506 until resolution of the controversy with CEE. The argument is without merit. The BLM's April 20, 1992, Decision addressed to Vulcan stated "we are requiring all lessees and working interests of record on lease OR 45506 to join the approved Deschutes Unit." (SOR, Ex. 2 (emphasis supplied).) At the time, BLM's records showed Vulcan held 9.36 percent of lease OR 45506. There was no controversy concerning ownership of this interest, and the April 20, 1992, Decision did not pertain to the disputed interest.

Standards of Review

The remaining issues require briefly addressing the standards of review identified by the parties. Approval of a unit or cooperative agreement is governed by 43 C.F.R. § 3283.2-1, which requires "a determination that such agreement is necessary or advisable in the public interest and is for the purpose of properly conserving the natural resources * * *." In addition, BLM and CEE cite Board decisions which state that a decision will be upheld on review if it has a rational basis in the administrative record and that an appellant has the burden of showing by a preponderance of evidence that the decision was in error, e.g., Suzanne Walsh, 75 IBLA 247 (1983); Atlantic Richfield Co., 63 IBLA 263 (1982). The BLM also notes the Board has held that the Secretary is entitled to rely upon the reasoned analysis of his technical experts on geothermal leases, e.g., Quadra Geothermal, Inc., 82 IBLA 188, 200 (1984). Vulcan disputes the manner in which these standards should be applied. (Vulcan Response at 30-33.)

Although BLM and CEE identify the correct standards, the record BLM submitted consists almost entirely of documents filed by the parties when proposing their units and lacks the requisite documentation of BLM's review and decisionmaking process. We have specifically noted the absence of some items, and based upon the file and documents submitted, must conclude that the BLM Decisions are not supported by the record. In such a case, the Decisions are properly set aside and remanded. See Predator Project, 127 IBLA 50, 53 (1993), and cases cited; Shell Offshore, Inc., 113 IBLA 226, 233-34, 97 Interior Dec. 73, 77-78 (1990); Kanawha & Hocking Coal & Coke Co., 112 IBLA 365, 368 (1990).

[5] The BLM, however, correctly notes that the Board accepts postdecisional documentation and that it has been provided Affidavits by Geehan, the official issuing the Decisions on appeal, as well as supporting exhibits. Although BLM is correct that such documents may serve to supplement the record on appeal, they are not necessarily equivalent to a contemporaneous record. See Save Our Cumberland Mountains, Inc., 108 IBLA 70, 85-86, 96 Interior Dec. 139, 147-48 (1989). An affidavit prepared to respond to specific issues and arguments raised by an adverse party is not

a substitute for a complete and contemporaneous record of the facts, analyses, policies, and reasoning upon which the agency relied in the decisionmaking process. Without such a record, it is impossible to answer the broader question of whether there was a rational basis for the Decision at the time it was made. Moreover, conclusory or argumentative statements by an affiant need not be accepted for purposes of appellate review. In this case, there is an additional limitation presented in that the documents do not include any analysis of the proposed units by BLM geologists or technical experts. Although Geehan states that he acted "[w]ith the assistance of my professional geologic staff," (BLM Answer, Aff. at 1), absent documentation, no special weight can be accorded to this assertion.

3. Effective Control of Operations

The regulations promulgated by BLM provide, inter alia, that a unit agreement may not be approved unless its signatories "hold sufficient interests in the area to give effective control of operations therein." 43 C.F.R. § 3283.2-1. As quoted above, BLM's letter to CEE stated that it had reviewed the "degree of overall effective control and control relative to geology, [and] estimated heat content," while its letter to Vulcan stated that it had reviewed the "overall effective control and control commensurate with geology with projected heat content." Thus, as argued by the parties, BLM reviewed "effective control" in regard to two matters—control of surface acreage and control of the surface overlying potentially productive geology. Vulcan argues that BLM erred in both matters.

In relation to its argument concerning Reed, supra, Vulcan asserts that at the time the BLM Decision was rendered with regard to the disputed leases, it controlled 79 percent of its proposed unit, while CEE exercised control of only 62 percent of its leases. Vulcan further contends that under any scenario, it had greater control of the surface area of its unit than CEE had of its unit. (SOR at 18.) 10/ In response, BLM notes that Geehan states he found each party controlled about 69 percent of its proposed unit and that he did not count leases OR 42138 and OR 40497 as part of either proposal because their assignment to Vulcan had not been

10/ Vulcan also relies upon several documents to show that BLM erred. It quotes geothermal guidelines issued by a Minerals Management Service (MMS) office in California which state that 80 percent committed lands is desirable. (SOR at 19; compare BLM Answer at 13; Geehan Aff. at 16.) The adoption of that standard by an MMS office may suggest that there are valid reasons for BLM to adopt a similar standard, but does not establish that BLM erred in approving a unit with less control. Vulcan also quotes the draft of an addition to the BLM Manual which states: "To assure effective control over unit operations, generally at least 85 percent, on an acreage basis, of the lands within the unit area must be fully, effectively, or partially committed to the unit agreement." (BLM Manual, Draft, H-3180-1.II.C.6.) As correctly noted by BLM and CEE, the draft concerns oil and gas lease unitization and therefore is not controlling. (BLM Response to Supplements at 7-8; CEE Response to Second Supplement SOR at 12-13.)

approved pending the posting of reclamation bonds. (BLM Answer at 6; Geehan Aff. at 5, 7.) Geehan also states that he excluded 1,280 acres in leases OR 11992 and OR 12419 from those committed to Vulcan's unit because "BLM records must control my decision." Id. at 6.

Vulcan's argument concerning effective control of surface acreage is based upon a misreading of the regulation. It requires that the signatories to a unit or cooperative agreement "hold sufficient interests in the area to give effective control of operations therein," 43 C.F.R. § 3283.2-1, but does not require that BLM choose between competing proposed units based upon the percentage of acreage controlled. Although the record does not reflect BLM's calculation of acreage in determining that Vulcan and CEE each controlled 69 percent of their proposed units, even if Vulcan controlled a greater percentage of its unit, that fact would not control the selection of a unit or negate the conclusion that both parties held acreage sufficient to achieve effective control of operations. The manner in which the percentage of the total acreage has been calculated by Vulcan and presented in support of its argument does not demonstrate that BLM erred in finding CEE effectively controlled the surface of its proposed unit.

The second matter BLM reviewed in examining "effective control" was control of the surface overlying potentially productive geology. Vulcan notes that 43 C.F.R. § 3281.2 requires an applicant to provide "[g]eological information, including the results of geophysical surveys, and such other information as may tend to show that unitization is necessary and advisable in the public interest * * *." It asserts that there are no drill holes for predicting heat content in proximity to the northeast portion of CEE's proposed unit and that BLM erred in not discounting the area in determining "effective control" based upon geology. (SOR at 19-20.) Vulcan also claims that the drill holes on the western side of the volcano were about 4,000 feet deep and that the data are not reliable for predicting production from significantly deeper areas. (SOR at 20.) Vulcan contends that no one has identified the geologic features in the area of the Monument which may indicate a commercial geothermal resource and that BLM erred in assuming that control of land closer to the caldera provided greater "effective control." Id. Additionally, Vulcan argues that the land in CEE's proposed unit which is severely restricted by land classifications should be regarded as less potentially productive than unrestricted land, and, consequently, that BLM erred in determining that CEE had greater "effective control." (SOR at 21-22.)

The BLM does not directly respond to Vulcan's arguments concerning its reliance on heat content or the reliability of its data. Geehan, however, states in his Affidavit:

> In our review of the geology, BLM was fully aware that heat content alone does not guarantee that a prospective exploration area will be productive, since other conditions like permeability and the presence of fluids are also required. However, given the many uncertainties and unknowns of the area, it is a reasonable

> premise that those areas with the highest heat, and the shallowest heat make priority exploration targets and offer at this stage of our knowledge a preferred exploration target.

(BLM Answer, Aff. at 2.) Geehan also states that he examined "the pattern of control of each [proposed unit] relative to our predicted pattern of heat distribution, as depicted on Exhibits B and C" (isopach maps showing the proposed units) and found that "the lands controlled by CEE tend to be [sic] encompass those lands we believe to have higher temperatures at shallower depth." Id. at 5. He states:

> It is generally believed by geologists who have worked in the area, that there are one or more buried magma bodies roughly in the center of the volcano, (see Exhibit D) [11/] and that the area closest to the volcano's center contains more heat than areas more distant from the volcano's center. Thus the location and pattern of CEE's leases gave it an advantage while the location and pattern of Vulcan's leases put it at a disadvantage.

Id. at 6.

The CEE points out that heat content was the basis of the "System for Determining Geothermal Resource Potential Equivalents of Newberry Volcano, Oregon" (the Study), which was developed by BLM for the purpose of issuing compensatory leases and provides a copy of the document. (CEE Answer at 3-4, 22; Ex. D.) The study developed a formula for estimating geothermal resource potential using data from 10 exploratory drill holes (CEE Answer, Ex. D at 8-10; see SOR, Ex. 16). The CEE defends BLM's use of heat content as reasonable and appropriate and provides an Affidavit by its geologist discussing vocanologic, temperature, resistivity, and structural data in support of BLM's conclusions. (CEE Answer at 23; Ex. E.) The CEE also describes the additional geologic evidence it provided BLM in support of its Deschutes Unit. (CEE Answer at 22-23; Ex. E at 2.)

Vulcan argues that "there is no heat flow data on the northeastern block of the CEE Unit Proposal. The nearest empirical data is much cooler than on the Vulcan dominated west flank." (SOR at 20.) It further argues that "the highest temperatures measured in shallow holes do not necessarily coincide with the hottest areas of deep resource." Id. Appellant argues that "[i]t is unknown which observable geologic features are most critical to the actual location of commercial resource at Newberry." Id. Thus, according to Vulcan, the northeastern block in CEE's proposed unit must be excluded. In our view, Vulcan's argument highlights the prospecting and

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11/ Exhibit D is MacLeod and Sherrod, "Geologic Evidence for a Magma Chamber Beneath Newberry Volcano, Oregon," Journal of Geophysical Research vol. 93, no. B9 (Sept. 10, 1988). Both authors are identified as employees of the U.S. Geological Survey.

exploration component of resource development. The issue is not whether BLM's data and assumptions are sufficient to prove the existence of a commercial resource, but whether, in the absence of proven data and extensive test drilling, temperature and proximity to the caldera are reasonable indicators of priority exploration targets. Stated another way, the question similarly is whether, in the absence of proven information and tests, the data showing cooler temperatures at one location disproves the potential for commercial resource or the existence of other favorable geologic features at another location. We find no ground for rejecting BLM's inferences, and we are aware of no regulatory or statutory provision that prohibits or restrains BLM's use of heat content and proximity to the caldera as a reasonable basis for establishing priority exploration targets where better data are not available.

Having said that, however, on remand BLM should articulate its rationale for including the northeastern block in the proposed unit should it again determine inclusion to be appropriate. In particular, we note that Acting State Director Hobson minimizes the importance of the acreage to be gained and lost by the rival proposals as a result of Vulcan's legal challenge because of the distance of the acreage from the volcano center. The map submitted by BLM as exhibit A to its Answer suggests that CEE's northeastern block and OR 11987 and OR 11992 are about equidistant from the center of the volcano.

Vulcan presents two specific arguments concerning BLM's determinations of control of the surface overlying potentially productive geology. First, it contends that BLM erred in excluding 1,280 acres in leases OR 42138 and OR 40497 because BLM knew they had been assigned to Vulcan, and, it argues, even if the assignment had not been approved, Geo-Newberry had joined them to Vulcan's unit. (Vulcan Response at 14-16.) Second, Vulcan claims that BLM may have erroneously included 748.67 acres in CEE's northeast block that were only under application to lease. Id. at 16. Vulcan believes BLM should be required to recalculate its determination of effective control to correct the errors. Id. at 17.

In response to Vulcan's claims, BLM filed a second Affidavit by Geehan and supporting exhibits. Geehan states that BLM did not promise Vulcan it would not count the disputed leases in determining effective control and that "unit calculations are made based on owners of record in the BLM public land records at the time the assessment is made." (BLM Response, Aff. at 1.) He disputes Vulcan's assertion that it should have counted leases OR 42138 and OR 40497, arguing that Vulcan incorrectly represented the status of bonding on the leases, which was a sufficient basis for excluding the lease acreage. Geehan, however, concedes that counting the 748.67 acres of leases OR 46342 and OR 47936 as effectively controlled by CEE was a "computational inventory error," because they were both lease applications. Id. at 3. Nevertheless, he states: "Removal of those two areas from CEE's tally of effective control acreage reduces their effective control 4.2 percent. All factors considered, we do not see a 4.2 percent change in effective control as a significant change. Discovery of this error is not sufficient cause to change the BLM Unit Decision." Id.

The BLM also addresses the calculation of acreage in its response to Vulcan's renewed arguments following its victory in district court. In regard to possible change of record ownership of leases OR 11987 and OR 11992, BLM notes that an Affidavit by Eric G. Hoffman, Acting Deputy State Director for Mineral Resources (apparently Geehan's successor), states that the change would add 640 acres to those committed to Vulcan's proposed unit, or 3.2 percent of its unit, and reduce those committed to CEE's unit by 1,200 acres or 6.7 percent of its unit. (BLM Response to Supplements to SOR at 6, and Aff. at 5.) The BLM also notes that Hoffman states that the 1,200 acres "lost by CEE if VPC eventually prevails in its litigation, are relatively distant from the volcano center and are presently considered to have lower potential value than most of CEE's leases in the northwest part of its proposed unit." Id. Hoffman stresses: "Most of VPC's lease acreage is distant from the volcano center, while most of CEE's lease acreage is closer to the volcano center (as close as the Newberry National Volcanic Monument Act allows). This proximity to the volcano center is a very important distinction." Id. at 6.

Vulcan's response expands upon another aspect of CEE's argument. It contends that the information developed for establishing the Monument, as represented on BLM's exhibits B and C, is not a reliable basis on which to make a decision about unitization. (Response at 13.) Vulcan argues that BLM has failed to explain how the information was used to calculate heat content, provide tabulations of the heat content of the proposed units, identify a methodology, or provide data indicating where a geothermal resource might be located. Id. Vulcan points out that the Study rejected using distance from the center of the Newberry crater as a basis for adjusting heat content, while BLM and CEE now "contend that proximity to the Crater is paramount," and Vulcan challenges BLM's reliance on the caldera as the location of the heat source. Id. at 13-14. Vulcan also claims that BLM's belief that areas with heat near the surface offer more likely prospects for development is speculative. Id. at 14.

It is clear that even given the exploratory aspect of resource development, many of Vulcan's arguments have merit. Indeed, Geehan accepts Vulcan's basic point that heat content is not a clear indicator of the location of a geothermal resource, although it would establish a priority exploration target. While Vulcan and CEE provided BLM other information, neither Geehan's Affidavits nor the record explains what role, if any, it played in BLM's Decisions. Exhibits B and C, to which Geehan refers, indicate that BLM decided effective control of potentially productive geology relying solely upon the projections of heat content developed for the purpose of issuing compensatory leases. See CEE Answer, Ex. D at 10-11 and maps dated July 1989. Vulcan's discussion of the limited data on which those projections were based raises valid questions about their reliability in determining effective control of the surface overlying potentially productive geology, particularly in regard to contouring on the northeast side. See SOR at 19-20, 27, Exs. 16, 17-1, 17-2; La Fleur Aff. at 5-7.

The question on review, however, is not simply whether BLM's analysis was deficient in some respect or whether it might have considered additional information. It is not sufficient to point out that there is no

reliable basis on which to predict with certainty the location of a commercial geothermal resource or to point out that various geologic features indicate that other areas may be productive. The question is whether the approach BLM took in determining the extent to which CEE and Vulcan had effective control was reasonable and is supported by the record.

Like Vulcan's more general argument that BLM's Decisions should be set aside due to insufficient information, the consequence of requiring geologically conclusive information would be to preclude approval of all proposed units until geologists have acquired a sufficiently clear understanding to allow BLM to properly determine "effective control." Vulcan correctly argues that BLM did not reach its decisions about effective control using all available relevant information, but fails to show that other information necessarily would require or result in an alternative analysis with a more certain or reliable result. Similarly, Vulcan challenges BLM's reliance on the caldera as the location of the presumed geothermal resource and the center for correlating heat content, but does not offer an alternative. The geologic information it relies upon appears to support its theory about where a commercial resource may be located, but does not constitute an analysis of "effective control" of potentially productive geology. See SOR, Exs. 16-1 and 16-2; Munson Aff. at 4-6, La Fleur, "A Geological Report on the Newberry Prospect" (Jan. 28, 1992).

[5] Absent a showing that BLM could have used a better analytical method, its reliance upon heat content to determine control of potentially productive geology cannot be held to have been unreasonable. What is unreasonable, however, is the dearth of data that BLM apparently considered in reaching its Decisions. The record upon which BLM relied is simply inadequate to show how it reached a judgment that the area controlled by either CEE or Vulcan created a superior resource opportunity under the heat content criteria it has articulated. With an inadequate administrative record and no reasoned analysis provided by BLM, we must remand these Decisions to BLM in order that it can carefully articulate that data upon which it relied in determining that CEE exercised control over more productive geology using the heat content criteria described above.

Although we do not reject BLM's use of heat content as the basis on which to determine effective control of the surface overlying potentially productive geology, we find that BLM erred in two other matters. First, as described above, BLM admits that it erroneously counted 748.67 acres under lease applications as effectively controlled by CEE. Second, we agree with Vulcan that BLM erred in not counting the 1,280 acres of leases OR 40497 and OR 42138 as committed to its proposed unit. Exhibit B to Vulcan's proposed unit agreement (as revised March 13, 1992) lists Geo-Newberry as the lessee of record for tracts 14 and 18, which are leases OR 40497 and OR 42138. A joinder by Geo-Newberry shows that it ratified Vulcan's unit agreement, committing its working interests in the tracts. Thus, as Vulcan

argues, even if record title had not transferred, 12/ the leases were committed to its proposed unit. Although BLM was properly concerned with bonding to insure that drill holes would be plugged, it was not necessary that the leases be assigned to Vulcan for them to be committed to its unit.

It is difficult to ascertain the effect of correcting these errors. As Vulcan notes, the record does not show how BLM calculated the acreage under effective control or valued it in regard to its relative heat content. In light of the scant record, we can only assume BLM will show, on remand, how it used the tract lists provided as exhibit B of the proposed unit agreements, the classification of acreage portrayed on BLM's exhibit A, and the estimated temperatures at 10,000 feet and the estimated depth of 400 degree Fahrenheit temperatures portrayed on exhibits B and C to establish relative weights for CEE and Vulcan in evaluating their respective claims.

Exhibit B, for example, shows the estimated temperature at 10,000 feet for the 190 acres of lease OR 47936 to range between approximately 575 and 675 degrees, while exhibit C indicates that a temperature of 400 degrees can be expected at about 6,000 feet. The 558.67 acres of lease OR 46342 lie further to the north and, consequently, the estimated temperature at 10,000 feet is closer to 500 degrees, while exhibit C shows that a temperature of 400 degrees is likely to be found at a depth of over 8,000 feet. The exhibits show the 640 acres of lease OR 40497 to have a temperature ranging from approximately 675 to 750 degrees at 10,000 feet and for temperatures to reach 400 degrees at 5,500 feet on the eastern boundary and 6,500 feet or below on the western side. A few miles to the south, the

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12/ The BLM's view of the status of the leases does not clearly appear in the documents in exhibit E. The Mar. 3, 1992, Decision titled "Approval of Assignment(s) Denied," states:

"Enclosed you will find three copies per assignment for geothermal leases OR 15927, OR 40497 and OR 42138. Refunds of the filing fees for these leases have been authorized because our decision of January 30, 1992 has already allowed for the change of the name of the record title holder from Geo-Newberry Crater, Inc. to Vulcan. Therefore, these assignment copies are unnecessary and will not be approved."

It appears that BLM denied the assignments because it believed it had already approved assignment of record title to Vulcan by its Jan. 30, 1992, Decision. That Decision (part of exhibit E), however, states that "record title to geothermal leases OR 40497, OR 43004 and OR 42138 will transfer only upon acceptance of a bond in the name of Vulcan Power Company which will cover all costs associated with reclamation of those leaseholds or with the completion of the required reclamation of those leaseholds when approved by the BLM authorized officer."
Although the condition is clearly stated, the two documents fail to show who BLM regarded as the record title holder on Apr. 20, 1992. See 43 C.F.R. § 3241.4; Piute Energy Co., supra, at 5-6.

640 acres of lease OR 42138 is projected to have lower heat content, with a temperature at 10,000 feet of 600 degrees in the middle of the section and of a temperature of 400 degrees at depths ranging from 6,500 to 8,000 feet.

Thus, the acreage to be added to the area effectively controlled by Vulcan is not only greater than that deducted from CEE's total, but also has higher heat content. Absent a record showing BLM's calculations of the acreage under effective control in each proposed unit and their relative heat content, we are unable to weigh the effect that correcting the errors might have. The BLM's assertion that CEE will maintain greater control of land near the center is insufficient. As shown on exhibits B and C, heat content is not directly proportional to distance from the caldera. Effective control of the surface overlying potentially productive geology was a significant, if not the primary, factor BLM relied upon in choosing CEE's proposed unit rather than Vulcan's. Were we to decide the effect of correcting the errors, we would have to do so without the benefit of the technical expertise of BLM's geologists. Therefore, we set aside BLM's Decisions so that it may review the matter. See Chevron U.S.A. Inc., 111 IBLA 96, 105 (1989), overruled in part, Orvin Froholm, 132 IBLA 301, 311 (1995).

4. Land Logically Subject to Development

Vulcan argues that BLM erred in approving the Deschutes Unit as "land logically subject to development" as a single consolidated unit. See 43 C.F.R. §§ 3280.0-5(a), 3280.0-5(d); SOR, Exs. 18, 19. In support, Vulcan points to section 3.1 of CEE's UOA, which prohibits combining the lands northeast of the Monument and those west of the Monument into a single participating area, and argues that this constitutes an admission by CEE that the two areas cannot be developed as a single consolidated unit logically subject to development. (SOR at 22-23 and Ex. 14-C at 5; see also Vulcan Response to CEE and BLM Answers at 17-18.)

The BLM responds to Vulcan's argument by pointing to Geehan's Affidavit, which states:

> The creation of the NNVM [Newberry National Volcanic Monument] left some unnatural boundaries in the Newberry area. BLM inherited those boundaries; we had no choice but to work with them. The Newberry National Volcanic Monument includes a panhandle that divides the CEE unit into two pieces, which are about one mile of each other. Prior to creation of the Monument, Federal geothermal leases covered the panhandle. The panhandle is not so wide as to preclude the exploration from one part benefiting our geologic understanding of the other. Temperature gradients are expected to be especially useful. Development on one parcel might possibly affect the resource potential on the other.

(BLM Answer at 9; Aff. at 17-18.) The BLM argues that this shows the two parcels are logically subject to development as a single consolidated

unit and also contends that there is no requirement that parcels in a unit agreement be contiguous. Id.

[6] Vulcan's argument results in the confluence of two distinct decisions. An applicant obtains designation of an area as logically subject to development by submitting geological and geophysical information. 43 C.F.R. § 3281.2. The aim is to identify and include the entire potentially productive area so that unified exploration, development, and production can occur. The BLM's approval of an area as logically subject to development is a preliminary decision which allows the applicant to prepare a final application, including a version of the unit agreement acceptable to BLM, and seek joinder from those who hold leases and other interests. See 43 C.F.R. § 3281.3. Approval does not preclude the applicant from submitting revisions to the boundaries or BLM from requiring revisions prior to final approval of the unit. Cf. 43 C.F.R. § 3286.1, art. IV. Nor does approval affect parties other than the applicant. By regulation, the designation of an area as logically subject to development does "not create an exclusive right to submit an executed agreement for such area, nor preclude the inclusion of such area or any part thereof in another unit area." 43 C.F.R. § 3281.2. Approval of CEE's proposed unit did not preclude Vulcan from seeking and obtaining approval of its proposed unit which included substantially the same land. Thus, Vulcan was not prejudiced by BLM's approval of CEE's proposed unit as logically subject to development.

On the other hand, a participating area is the portion "of the Unit Area which is deemed to be productive from a horizon or deposit and to which production would be allocated in the manner described in the unit agreement assuming that all lands are committed to the unit agreement." 43 C.F.R. § 3280.0-5(h); see Davis Oil Co., 53 IBLA 62 (1983). The BLM designates a participating area after the unit operator has submitted geologic information obtained during exploration, an engineering report, information about costs, and other data. 43 C.F.R. § 3283.3; see 43 C.F.R. § 3286.1, art. XII. We agree with Vulcan that the provision of CEE's UOA is unusual in that it anticipates a matter which cannot be decided until a geothermal resource has been discovered, the unit operator has submitted the required information, BLM's geologists have reviewed it, and BLM has considered the factors involved in designating a participating area. See, e.g., Champlin Petroleum Co., 100 IBLA 157 (1987); Monsanto Oil Co., 95 IBLA 112 (1987). However, as noted by BLM and CEE and discussed below, BLM is not a party to the UOA, and the provision cannot control its review. The matter at issue in this appeal is not CEE's attempt to designate participating areas, but BLM's Decision that, based upon the geological and geophysical information submitted by CEE, the Deschutes Unit is logically subject to development. Inconsistency in CEE's position does not make BLM's Decisions unreasonable.

5. Unit Operating Agreement

Vulcan contends that "BLM approved an unreasonable CEE Unit Operating agreement (UOA) that (1) gives CEE sole discretion for west side

development of the most potential sites, mostly controlled by VULCAN, and (2) provides, in effect, that only the unit operator, CEE, can propose wells and designate participation areas." (SOR at 23.) The argument concerns the statement in BLM's Decision addressed to CEE that reserved "the right to require others within the confines of the Unit boundary to also join the Deschutes Unit, if deemed necessary" and the portion of the Decision addressed to Vulcan requiring "all lessees and working interests of record on lease OR 45506 to join the approved Deschutes Unit to assure conservation of resources and orderly and proper development of the area." Vulcan asserts that "prior to requiring a leaseholder to join a UOA, BLM has a duty to ensure that the provisions of the UOA are reasonable and protect the rights of the leaseholders." (SOR at 24.) It contends BLM violated this duty by allowing the UOA to include provisions which Vulcan describes as "oppressive and inequitable." Id. Vulcan identifies a number of provisions to which it objects and claims that "it is inequitable to approve a UOA that offers the prospect of CEE controlling VULCAN leasehold interests." Id. at 26; see also Vulcan Response to CEE and BLM Answers at 18-20. In support, Vulcan discusses the exploratory holes which have been drilled in the area, contending that it owns more of the well data and that the greatest geothermal potential lies under lands for which it has acquired the leases. Id. at 26-27.

The BLM's Answer does not respond to Vulcan's claims. Geehan, however, replies in his Affidavit that he "did not consider the merits of the unit operating agreements that were included with each party's proposed unit agreement" and "did not approve or disapprove the UOA." (BLM Answer, Aff. at 15.) He further explains:

> The UOA is a private agreement among the joinders to a unit on how they will carry out their business. A UOA usually addresses how decisions will be made among parties and how revenues and expenses will be shared among parties. The United States is not a party to these agreements. It is generally assumed that each member of a unit will protect his/her own interests without Government (BLM) having to get involved.

Id. at 16.

In addition to asserting that BLM has authority to order joinder, CEE argues that the unit operator is selected by owners of the working interests and BLM reviews the selection only to ensure that the operator is qualified. (CEE Answer at 18, 24; see 43 C.F.R. § 3282.1.) The CEE also claims that BLM approved only its unit agreement and not its UOA. Id. at 27. Citing Piute Energy Co., supra, CEE contends that the UOA "is a private contract document between working interest owners and the operator" and that BLM does not participate in establishing or enforcing it. Id.

[7] As framed in Vulcan's SOR, the company does not challenge BLM's authority to require joinder. See 30 U.S.C. § 1017 (1994); see also Vulcan Second Supplement to SOR at 1-2. Rather, Vulcan's arguments concern the

relation between BLM's joinder order and CEE's UOA. Vulcan assumes that the order requires Vulcan to sign the UOA. In subsequently arguing that BLM has a policy not to require joinder unless all working interests are committed to a unit, 13/ Vulcan makes the assumption explicit: "Forced joinder to a Unit Agreement also forces joinder to the Unit Operating Agreement, a private agreement among the parties." (Second Supplement to SOR at 4; Reply to CEE and BLM Responses at 5.)

The issue whether an order of joinder requires a party to sign the related UOA was touched upon in Chevron U.S.A. Inc., supra. Chevron argued that a statement by BLM that one of the lease terms did not require Chevron to ratify the UOA meant that BLM could order it to do so. Chevron U.S.A. Inc., supra, at 105-106. The Board disagreed with the inference, stating:

> BLM held that Chevron could not be forced to accept the unit operating agreement and was free to negotiate an operating agreement with the unit operator. Once a unit operating agreement has become effective[,] BLM is without authority to amend the agreement without consent of the parties. Coors Energy Co., 110 IBLA 250 (1989).

Id. at 106. The ruling was consistent with the Department's longstanding recognition that UOA's and unit agreements are contracts among the signatories. Duncan Miller, 25 IBLA 125, 128 (1976) (unilateral intent to join unit agreement insufficient to commit a lease due to lack of mutual consent); Shannon Oil Co., 62 Interior Dec. 252 (1955) (Secretary lacks authority to reform a unit to include land inadvertently omitted from lessee's list of lands held); see also Jack J. Grynberg, 88 IBLA 330, 333 n.4 (1985) ("A unit agreement is a contract between the United States and participating parties for joint development and operation of an oil and gas field where substantial amounts of public lands are involved.")

The BLM could have reviewed the terms of the UOA prior to its acceptance and the formation of a contract. See Chevron U.S.A. Inc., supra, at 106; Coors Energy Co., supra, at 259, 263 n.2 (Burski, A.J. concurring). It did not do so. The notion that BLM could directly or indirectly order a party to execute a contract BLM has not reviewed and approved is not legally sustainable. The statute granting authority to order joinder requires that BLM "shall adequately protect the rights of all parties in interest, including the United States." 30 U.S.C. § 1017 (1988); see also Chevron U.S.A. Inc., supra, at 104 (BLM must consider reasonableness of a unit agreement). Therefore, BLM's order that Vulcan join its interest in

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13/ Vulcan's argument that BLM has such a policy misconstrues the nature of the change in policy BLM was considering in the documents upon which Vulcan relies. The matter examined was the classification of leases as committed to a unit, not joinder. See BLM Manual Draft, H-3180-1.II.U. Obviously, if all working interests are committed to a unit, there is no need to order any to be joined.

OR 45506 to CEE's Deschutes Unit cannot be held to have required Vulcan to execute the UOA. 14/

6. Completeness and Accuracy

Vulcan challenges BLM's selection of CEE on the basis of "completeness and accuracy of the Unit Agreement and Plan of Operation." Initially, Vulcan points out that BLM's Decision could not have been based upon the unit agreements because, except for provisions identifying drilling obligations the language of which was prescribed by BLM, both proposals follow the model unit agreement verbatim. (SOR at 28; see Exs. 18, 19; 43 C.F.R. § 3286.1.) Consequently, Vulcan concludes, BLM must have found that the criterion of "completeness and accuracy" favored CEE's plan of operation. Vulcan argues that BLM failed to recognize that CEE's two plans of operation (one for each portion of its proposed unit) fail to identify access roads, inaccurately describe wellsite locations, and propose drill sites in roadless areas. One of the plans locates a well in a "no surface occupancy" area. (SOR at 29-30.) Additionally, Vulcan contends that its proposed plan of operation sets forth a more timely and efficient exploration program. (SOR at 30-32.)

Neither BLM nor CEE directly responds to Vulcan's arguments. Geehan, however, states in his Affidavit that there were "minor errors" in both CEE's and Vulcan's submissions, but that those in CEE's proposal "did not render its submission as fatally flawed." (BLM Answer, Aff. at 18.) Geehan faults Vulcan's plan of operation for not including the wells called for in its unit agreement and for proposing a well on lease OR 40497 for which "Vulcan has yet to accept transfer of title." Id. at 18-19. Additionally Geehan states that Vulcan's plan failed to identify water supplies and road building materials, fire and pollution control measures, emergency and contingency plans, and a statement as to the presence or absence of cultural, historical, and Native American religious sites. Id. at 20-21. Vulcan's response disputes his assertions. (Vulcan Response at 20-22.)

Other than Geehan's Affidavit, there is no record on which to review BLM's determination that CEE's proposal was more "complete and accurate." The Affidavit does not describe BLM's evaluation of the importance of the deficiencies or the weight given each criterion relative to others. Nor does it state that the errors in Vulcan's proposal were sufficient to reject its application. While finding that CEE's proposal was more

14/ The relevant provisions of CEE's unit agreement are identical to those of the model unit agreement. Compare SOR, Ex. 15, at 15, arts. 25.2, 25.3 with 43 C.F.R. § 3286.1, arts. 25.2, 25.3. The provisions contemplate that working interests voluntarily joining a unit will also commit to the UOA, but do not address forced joinder. See Coors Energy Co., supra, at 261, quoting High Crest Oils, Inc., 29 IBLA 97, 98 (1977) (voluntary commitment "is accomplished by signing the unit agreement and the unit operating agreement").

complete, it also appears that BLM approved CEE's Deschutes Unit after discovering omissions or inaccuracies in its application and two plans of operation without requiring corrections or supplementation. Accordingly, the determination is set aside. On remand, BLM should allow the parties to correct the deficiencies.

7. Experience and Power Marketing

Vulcan's final argument addresses two matters. First, Vulcan argues that BLM erred in using "experience" as a criterion to evaluate the applications, and, even if it was proper, that BLM lacked information on Vulcan's and CEE's experience to objectively evaluate them. (SOR at 33.) Vulcan states that BLM never requested such information and its application contained only a brief description of its personnel. Vulcan presents information concerning its personnel, particularly identifying those who previously worked for CEE's parent, California Energy Company. (SOR at 34-36; Munson Aff. at 6-10.) Second, Vulcan contends that BLM lacked authority to use "power marketing" as a criterion. Vulcan notes that there is no requirement to submit a power marketing plan and that plans of operation are limited to matters such as the location and construction of wells, power plant facilities, and transmission lines, and monitoring reservoir performance. (SOR at 37.) Vulcan also asserts that "[p]ower markets are readily available to both companies upon resource confirmation at Newberry." Id.

The BLM understands Vulcan's arguments about "power marketing" to concern BLM's "consideration of the fact that CEE and not Vulcan has been selected by the Bonneville Power Administration [BPA] for continuing negotiations for the purchase of electric power from a geothermal generation plant at the Newberry Crater." (BLM Answer at 12.) The BLM relies upon Geehan's Affidavit to justify power marketing as a factor in selecting the unit proposal. Id., see Aff. at 12-14. Geehan explains that BPA decided it needed to add geothermal power to its sources of electricity and solicited proposals, to which both CEE and Vulcan responded, CEE's proposal being the one selected for further consideration. Id., Aff. at 13-14, Exs. M, N, O; see CEE Answer at 14-15, Ex. H. He states that CEE's selection by BPA gives the company "an additional incentive to carry its exploration efforts through to development" and the fact that no geothermal project has been completed in Oregon is "why this is such an important aspect of consideration, and was included in BLM criteria." Id., Aff. at 14-15. Geehan adds that "[e]xperience in design, installation, and operation of geothermal flow lines and power plants are part of the power marketing package. The CEE has the experience, while Vulcan as a company has none." Id., Aff. at 15.

The CEE defends its selection by BLM on the basis of experience, noting that in addition to Coso, California, it has "experience operating federal geothermal units in other states" and identifies a number of projects. (CEE Answer at 26.) The CEE also defends BLM's use of "power marketing" as a criterion, noting that 43 C.F.R. § 3283.2-1 provides that BLM must determine that a unit agreement is "in the public interest." Id. at 31-32. In

support of BLM's determination, CEE points to "its pilot project with BPA, its joint development efforts with EWEB [Eugene Water and Electric Board], and its parent's established success at COSO." Id. at 32.

Both BLM and CEE present vigorous responses to Vulcan's claims. The BLM asserts that it "did not make promises to BPA or give it advice which influenced its decision to award a power marketing contract to CEE." (BLM Response to Supplements at 5; see Aff. at 12-13.) Both BLM and CEE argue that BPA's Decision is not a matter which should be reviewed by the Board. (CEE Response to Supplements at 8.) The CEE also responds to Vulcan's specific claims, asserting that its Memorandum of Understanding with BPA and EWEB does not restrict the location of a power plant "to specific lease locations." The CEE states that "[t]he power plant need not and will not be located on Lease OR 45505 or OR 45506." Id. at 10.

[8] We do not in general fault BLM for using "experience" and "power marketing" as criteria for reviewing the proposed units. We do, however, fault BLM for not defining or explaining what it means by these terms. Although they are not applied by BLM in reviewing proposed oil and gas units, the Geothermal Steam Act and Departmental regulations give broad authority to administer geothermal leases and unitization "as necessary or advisable in the public interest" and authorizes the Secretary to issue regulations regarding unit plans "as he may deem necessary or proper to secure protection of the public interest." 30 U.S.C. § 1017; see also 30 U.S.C. § 1023 (1994), 43 C.F.R. § 3283.2-1. Vulcan claims the criteria are not within the Department's authority, but provides no argument in support.

Vulcan's true complaint, however, is about the manner in which BLM has applied the criteria. The record does not indicate that Vulcan or CEE was given notice that the criteria would be used, was advised as to the types of information BLM would consider, or was allowed to submit information. Application of undisclosed and undefined criteria raises questions of fundamental fairness and cannot be sustained. Nor is BLM's evaluation of the applicants evident from the record. The BLM acknowledges that, when it reviewed Vulcan's "experience," it considered the experience and reputation Vulcan's employees had acquired during prior employment, (BLM Answer, Aff. at 11), but BLM does not seem to have done so in reviewing "power marketing," finding Vulcan "as a company" lacked "[e]xperience in design, installation, and operation of geothermal flow lines and power plants." Id. at 15. The BLM also concluded that successful operation of a unit requires a "larger and more diversified and experienced team and aggregate skill mix" than Vulcan's employees have, but states that "BLM considered Vulcan to be qualified to obtain unit approval" and that the company "is still free to submit another unit application for a revised unit." Id. at 11. If BLM believes that successful development and operation of a geothermal unit requires greater "experience" than Vulcan has, it is difficult to understand why BLM also believes Vulcan could undertake a similar project with a revised unit. Accordingly, we must set aside BLM's determinations as to "experience" and "power marketing."

Conclusions

The April 20, 1992, Decisions of the Oregon State Office are set aside for failure to comply with NEPA. Appellant's arguments that BLM should have withheld issuance of lease OR 45506, approval of a unit agreement, and forced joinder of Vulcan's interest until resolution of the conflict between Vulcan and CEE, are rejected. Vulcan's challenges to BLM's reliance upon the projections of heat content portrayed by exhibits B and C to determine "effective control" of potentially productive geology are sustained, however, and the Decisions selecting CEE must be set aside and remanded to BLM to provide a rational basis in the administrative record of what information and data BLM actually used in its selection process. For this reason, the forced joinder imposed upon Vulcan by BLM is set aside. The BLM's erroneous conclusions related to the acreage under the effective control of Appellant and its valuation with regard to relative heat content are also set aside and remanded for correction of the errors identified above. Vulcan's arguments that BLM erred in approving the Deschutes Unit as "land logically subject to development" are rejected. The BLM's determinations applying the criteria of completeness and accuracy, experience, and power marketing are set aside.

Other arguments presented by the parties have been considered and found to be not determinative. Vulcan's request that an administrative law judge be assigned for a hearing is denied. Finally, Vulcan's Motion to Re-Open the Record is denied.

Therefore, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 C.F.R. § 4.1, the April 20, 1992, Decisions of the Oregon State Office are set aside and remanded for further action consistent with this Decision.

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James P. Terry
Administrative Judge

I concur:

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T. Britt Price
Administrative Judge